Three New Species of *Passiflora* (Passifloraceae) from Ecuador and Notes on *Passiflora viridescens*

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ABSTRACT. Three species are described as new, viz., *Passiflora trochlearis*, *P. smilacifolia*, and *P. luzmarina*. Ten species are reported as new for the country, viz., *Ancistrothyrsus hirtellus*, *P. tessmannii*, *P. putumayensis*, *P. pittieri*, *P. viridescens*, *P. biflora*, *P. candollei*, *P. glaberrima*, *P. caerulea*, and *P.* aff. *kermesina*. Five species are mentioned that appeared in the literature since the publication of the Passifloraceae in the *Flora of Ecuador* as either new taxa or as extensions of distribution into Ecuador, viz., *P. morifolia*, *P. brachyantha*, *P. linda*, *P. jatunsachensis*, and *P. chrysosepala*. Three taxa had misapplied names in the flora; these misunderstandings are rectified. The total number of genera and species in Ecuador is 3 and 92, respectively, an increase of 15 taxa, or 20% in less than 10 years.

RESUMEN. Se describen *Passiflora trochlearis*, *P. smilacifolia* y *P. luzmarina* como nuevas. Las diez especies siguientes son, por primera vez, reportadas para el Ecuador: *Ancistrothyrsus hirtellus*, *P. tessmannii*, *P. putumayensis*, *P. pittieri*, *P. viridescens*, *P. biflora*, *P. candollei*, *P. glaberrima*, *P. caerulea* y *P.* aff. *kermesina*. Las cinco especies siguientes han sido reportadas en la bibliografía desde la publicación de la "Flora of Ecuador": *Passiflora morifolia*, *P. brachyantha*, *P. linda*, *P. jatunsachensis* y *P. chrysosepala*. Tres taxones fueron tratados bajo nombres equivocados en la Flora; estas equivocaciones se rectifican aquí. El número total de géneros y especies en el Ecuador son 3 y 92 respectivamente, ésto significa un incremento de 15 taxones, o del 20% en menos de 10 años.

Since the publication of Passifloraceae in the *Flora of Ecuador* (Holm-Nielsen et al., 1988), Escobar (1992), MacDougal (1994), Panero (1996), and Schwerdtfeger (1997) reported *Passiflora brachyantha* L. K. Escobar, *P. morifolia* Masters, *P. linda* Panero, *P. jatunsachensis* Schwerdtfeger, *P. chrysosepala* Schwerdtfeger, and *P. ulmeri* Schwerdtfeger, respectively. Three misapplications of names made in the *Flora of Ecuador* (Holm-Nielsen et al., 1988) are here rectified, and *P. ulmeri* is synonymized with *P. viridescens* L. K. Escobar. We are here describing 3 new species and can report the following 10 as new for the country: *Ancistrothyrsus hirtellus* A. H. Gentry, *Passiflora tessmannii* Harms, *P. putumayensis* Killip replaces *P. arborea* Spreng sensu Holm-Nielsen et al. (1988), *P. pittieri* Masters, *P. viridescens* L. K. Escobar, *P. biflora* Lamarck, *P. candollei* Triana & Planchon, *P. glaberrima* (Jussieu) Poir., *P. caerulea* L., and *P.* aff. *kermesina* Link & Otto.

The *Flora of Ecuador* included 2 genera and 77 species, and listed 1 additional genus as expected, but not documented. The total number of Passifloraceae in Ecuador is now 3 genera and 92 species. We describe the new species and emend the description of *Passiflora viridescens* to be able to use the information in the *Catalogue of Vascular Plants of Ecuador* (Jørgensen & León, in prep.). The cited author of each new species provided the respective descriptions.

Passiflora trochlearis P. Jørgensen, sp. nov. TYPE: Ecuador. Pichincha: Reserva ENDESA, Quito–Puerto Quito road at km 113, 650–800 m, 0°03′N, 79°07′W, 23 Jan. 1987 (fl), *P. Jørgensen 61637* (holotype, QCA; isotypes, AAU(3), MO). Figure 1.

Haec species a *Passiflora venosa* Rusby petiolis longioribus; glandulis, supra petiolos et costas oblongis; inflorescentia axillari ex cyma centrali in cirrhum longum evoluta et cymis lateralibus brevibus constante differt.

Liana, stem to 1.5 cm diam., puberulent, indument light brown, to 0.1 mm. Stipules 1.5 mm, deltoid, very early deciduous; petioles 2.0–4.0 cm, the glands 2 × 0.7 mm, elliptic, scarlike, reddish brown, confined to the midrib at junction between leaf blade and petiole; leaf blades 6.5–14.7 × 4.0–9.5 cm, unlobed, ovate, entire, the base truncate or rounded, the apex acute, chartaceous, 6–10 light brown lateral nerves per side, above green and pubescent along nerves, below olivaceous green, white-puberulent. Inflorescences axillary, simple or compound dichasiums, the central cyme or flower developed into a long-lasting tendril, old tendrils with barely visible scars from the lateral cymes, apparently a maximum of two flowers flowering per

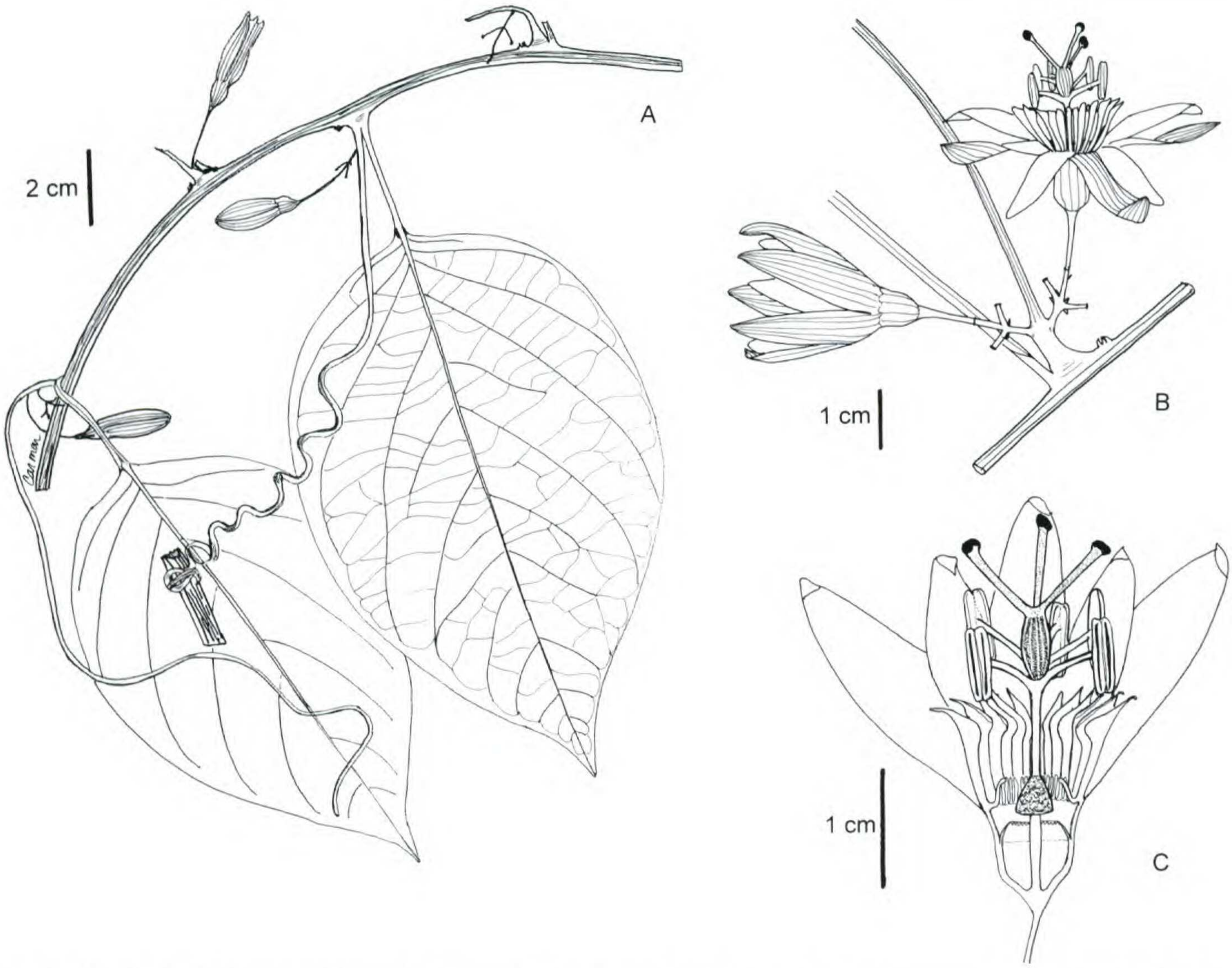

Figure 1. A–C *Passiflora trochlearis* P. Jørgensen. —A. Habit with buds. —B. Inflorescence. —C. Flower. (A–C, *P. Jørgensen 61637*).

node at one time, lateral cymes placed at base of tendril or up to 1.0 cm from base; bracts 0.8–1.5 × 0.3 mm, triangular, light brown puberulent. Flowers 4.0–5.0 cm diam.; hypanthium 1.0–1.3 cm long, 1.0–1.3 cm wide at mouth, campanulate, whitish green, white puberulent outside; sepals 2.0–2.5 × 0.5–0.6 cm, narrowly oblong, obtuse, whitish green, 5-nerved, glabrous; petals 1.3–1.8 × 0.4–0.5 cm, narrowly oblong, obtuse, white; outer corona elements 0.9–1.1 cm, straight, trigonous, subdolabriform, yellowish with purple spots, margin irregular; inner corona elements 1.5 mm, filiform, yellow; operculum placed 6 mm from base of hypanthium, erect for 2 mm then horizontal, margin dentate; androgynophore 1.7–2.0 cm, green with a purple conical trochlea 0.8–1.2 cm from base, between operculum and inner corona series; ovary ellipsoid, ten-ribbed, white puberulent; styles 0.9–1.0 cm, puberulent. Fruit unknown.

Passiflora trochlearis is from the coastal lowlands of Ecuador, known only from the type locality in the tropical rainforest reserve known as ENDESA. This area is part of the Ecuadorian portion of the Choco biogeographical zone; see Jørgensen and Ulloa (1989) for further information on the flora in this area. At the type locality *P. trochlearis* occurs together with *P. macrophylla* Masters and *P. pittieri* Masters.

Passiflora trochlearis is named after its purple trochlea, a striking feature on a light green androgynophore. It belongs to the subgenus *Astrophea* (DC.) Masters and resembles *P. venosa* Rusby from Bolivia, *P. tessmannii* Harms and *P. cirrhipes* Killip from Peru, and *P. rhamnifolia* Masters from Minas Gerais, Brazil. It differs clearly from these species by its larger flowers, different inflorescence, and longer petioles; further differences are given in Table 1. *Passiflora trochlearis* cannot be keyed out in the *Flora of Ecuador*, for it does not fit in any of the first numerals of the key for the subgenus *Astrophea*. When using Escobar's comprehensive key to subgenus *Astrophea* (Escobar, 1994), in the first half it keys out as *P. rhamnifolia*, in the latter half as *P. venosa*. The presumed ancestral character

Table 1. Comparison of *Passiflora trochlearis* and its closest relatives.

Character/Species	*P. rhamnifolia*	*P. tessmannii*	*P. venosa*	*P. cirrhipes*	*P. trochlearis*
Petiole length in cm	1.3–3.0	0.5–1.5	1.5	0.9–1.5	2.0–4.0
Position and shape of petiolar glands	on petiole, oblong	on base of leafblade between midrib and margin, oblong to triangular	on base of leafblade between midrib and margin, triangular	on base of leafblade between midrib and margin, oblong	glands at junction of blade and petiole, restricted to petiole and midrib, oblong
Leaf texture	subcoriaceous	membranaceous	subcoriaceous	membranaceous	membranaceous
Number of peduncles per flowering node	1	1–2	1–2	1–2, or a simple dichasium where the central flower is developed into a tendril	2–6, simple or compound dichasium, central dichasium or flower transformed into a tendril
Peduncle and floral stipe length in mm	12, 16 (fr)	2, 6–7 (fl)	4, 11 (fl); 7, 13 (fr)	6–17, 13 (fl)	15–18, 9–12
Hypanthium length	6 mm	8–11 mm	5–6 mm	7–8 mm	10–13 mm
Petal length relative to sepals, and color	shorter, white	equal, color unknown	longer, diagnosis says purple? (probably white)	shorter, white	shorter, white
Number of corona series	2	2	2	3	2
Shape and length of outer corona in mm	subdolabriform, 10	corona falcate, 6–7	subdolabriform, 11	subdolabriform, 9–10	subdolabriform, 9
Trochlea shape, size in mm (width of trochlea, androgynophore below, and above), and color	annular fusiform, 2.3/1.8/1.8 (fr), red	annular flat, disk-shaped, 3.1/1.8/0.9 (fl), unknown	annular fusiform, 2.1/1.8/1.8 (fr) 1.6/1.3/1.3 (fl), unknown	absent	annular, conic, 3.1/1.2/0.8 (fl), purple
Ovary	densely pubescent, fine straight trichomes	velutinous, light brown trichomes	pubescent, yellow brown trichomes	densely pubescent, yellow to reddish trichomes	puberulent, with white trichomes
Length of styles in mm	8–9	4–6	7	5–6	9–10

state of the tendril and pedicels sharing a common peduncle was used by Killip (1938) to place *P. cirrhipes* in its own section *Cirrhipes* Killip (section name invalidly published, no Latin description). *Passiflora trochlearis* would fall within this group by Killip's criterion. However, we doubt that a section based on this character could be maintained separate from section *Pseudoastrophea* (Harms) Killip, where the other mentioned species are placed.

Paratype. ECUADOR. **Pichincha:** Reserva Forestal ENDESA, Río Silanche, Corporación Forestal Juan Manuel Durini, km 113 de la carretera Quito–Pto. Quito, faldas occidentales, a 10 km al Norte de la carretera principal, 0°05′N, 79°02′W, 650–700 m, 20 Mar. 1985 (fl), *Jaramillo 7539* (QCA).

Passiflora smilacifolia J. MacDougal, sp. nov. TYPE: Ecuador. Napo: 17 km W of Lumbaqui, 70 km W of Lago Agrio, 1130 m, 4 Nov. 1974 (fr), *A. Gentry 12447* (holotype, QCA; isotype, MO).

Haec species *Passifloram lanceariam* Masters simulans sed ab ea fructu seminibusque minoribus atque gemma vegetativa prophyllo unico obtecta differt; a *P. cuspidifolia* Harms lamina foliari subtus glabra subglabrave atque ovario glabro differt.

Vine, glabrous to glabrescent throughout, or microscopically sparsely pubescent with trichomes 0.04–0.1(–0.2) mm on shoot tip, nodes, petioles, and under leaf; stem subterete to compressed, sometimes slightly scabrous, drying striate. Prophylls of the vegetative ramifying bud 1, lateral. Stipules 1.5–3.5 × 0.3–0.5 mm, linear triangular, falcate; petioles 1.4–2.5 cm, eglandular; leaf blade 4.5–9.0 × 1.5–5.5 cm, elliptic, unlobed to obscurely trilobed, 3-nerved, acute to acuminate, base cuneate to rounded-cuneate, glossy and usually variegated along the nerves above; ocellate beneath with 2 conspicuous nectaries at base of nerves and 6–10 others mostly on the distal ⅔, these sometimes raised into conspicuous bumps adaxially; (leaves of juveniles lanceolate, unlobed, acuminate, always variegated; leaves of seedlings 3-lobed, the lobes subequal, variegated, purple beneath). Peduncles 0.4–1.5 cm, solitary or in pairs; bracts 0.5–1.2 mm, setaceous; floral stipe 0.6–1.2 cm, to 1.4 cm in fruit. Flowers 3.5 cm diam.; sepals 1.6–1.8 × 0.9 cm, broadly triangular, obtuse, light green outside, whitish green inside; petals 1.2–1.3 × 0.5 cm, lanceolate, obtuse, white; corona biseriate, the outer series white with a reddish or purplish band subapically; limen annular; androgynophore 6–8 mm, the area between limen and base of androgynophore puberulous; filaments purple or white; ovary glabrous, green; styles purple; stigma green. Fruits 2.5–3.0 × 2.0–2.7 cm, globose to widely ellipsoid, glabrous. Seeds 4.2–4.5 × 2.8–3.0 mm, obovate, symmetric or very slightly obcampylotropous, transversely rugulose with 6–9 sulci.

This new species in section *Decaloba* was described in the *Flora of Ecuador* (Holm-Nielsen et al., 1988) under the misapplied name *P. lancearia*, and was accompanied by an excellent illustration. *Passiflora lancearia* ranges from Chiapas, Mexico, to Panama and differs by its large seeds (4.8–6.7 × 4–6.6 mm) and, notably, 2 equal prophylls of the axillary bud. Also similar to the new species is *P. cuspidifolia*, which differs by its pilose ovary, pilosulous underside of the leaf, obvious nectar ring, and glabrous limen (Holm-Nielsen et al., 1988). *Passiflora viridescens* L. K. Escobar can have similar unlobed, lanceolate leaves, but those are never variegated; the green flowers of that species are pendent on long peduncles.

The leaves at reproductive nodes are typically twice as long as wide, but can be up to four times as long, especially in juveniles. In the type, the laminar nectaries appear as conspicuously raised bumps on the top of the leaf, and may thus also function as heliconiine egg-mimics (Gilbert, 1982).

Of the specimens cited in the *Flora of Ecuador*, we have only one now at hand; this is designated as the type.

Specimens examined. ECUADOR. **Napo:** Estación Biológica Jatun Sacha, Río Napo, 8 km al E de Misahuallí, 450 m, 1°04′S, 77°36′W, 23–27 June 1987 (juvenile), *C. E. Cerón 1719* (MO, QCNE). **Pastaza:** Km 1–3 on trail Mera–Colonia Jativa, 1100 m, *Harling et al. 14727* (GB); Puyo–Macas road, 5 km SE of Veracruz, 950 m, *P. Jørgensen & Lægaard 56475* (AAU, QCA, QCNE).

Passiflora viridescens L. K. Escobar, Phytologia 66: 81. 1989.

Passiflora ulmeri Schwerdtfeger, Hausknechtia 6: 46. 1997. TYPE: Ecuador. Loja: Saraguro–Loja road km 39, 2500 m, 6 Sep. 1996, *Schwerdtfeger 96090602* (holotype, QCA not seen; isotypes, AAU not seen, GOET not seen, MO, QCNE not seen, US not seen).

Passiflora viridescens was described as an endemic species known only from the type locality in northern Peru. Since its publication more material has become available, particularly from Ecuador, and it has become evident that this is actually the species treated by the *Flora of Ecuador* (Holm-Nielsen et al., 1988) under the misapplied name *P. cuspidifolia* Harms. The recently described *P. ulmeri* is conspecific with *P. viridescens*. The material now at hand provides us with reason to emend Linda Escobar's description and provide some observations on its pollination biology.

Woody liana, reaching ca. 8 m, minutely pubescent to glabrescent, with subterete, striate stems to 5 cm diam. Stipules 2.5–6.0 × 1.0 mm, linear falcate; petiole 0.8–3.2 cm, striate; blade lanceolate, occasionally ovate, 6.2–14 × 2.5–8.3 cm, coriaceous, glabrous above, lightly pubescent beneath, apex 2- or 3-lobed (or occasionally unlobed), with erect triangular lobes, the lobes often unequal, normally the central lobe exceeding lateral lobes, less frequently lateral lobes longer, or lateral lobes rarely missing, lateral lobes (0–)0.1–0.5(–1.3) cm, acute apiculate; central lobe (0–)1.0–1.9 cm, acute apiculate; leaf base cordate to truncate or rounded; margin entire, slightly revolute; 4–18 laminar nectaries, ocellate, located between major veins on abaxial surface, a few occasionally located outside major veins. Peduncle 4.0–9.5 cm, paired or occasionally solitary; floral stipe 7–12 mm; bracts 3, dissitate, setaceous, 3–6 × 0.5 mm. Flowers 6.0–7.0(–10) cm diam., light green; hypanthium patelliform, 5-angular, 0.2 × 1.7–2.2 cm; sepals narrowly triangular, carinate, 2.4–3.7(–5.5) × 0.6–0.8(–1.1) cm, membranaceous to subcoriaceous, 3(–5)-nerved, green outside with white hyaline margins, light green inside; petals oblong to lanceolate, 1.5–2.8 × 0.4–0.7 cm, membranaceous, light green; corona in 1 series; outer series 7–14 × 2 mm, ligulate, thick-fleshy, with two filaments placed opposite each sepal, one opposite each petal, in open flowers usually only small remains can be found; operculum ca. 2 mm high, placed very near the limen, or the basal portion adnate to the edge of the limen (in dry open flowers it seems to originate from the limen), the margin lacerate or cleft, the free portions 0.5–1.3 mm long, the basal part not plicate; nectary apparently absent; limen annular, disk-shaped; androgynophore 0.5–0.8(–1.7) cm; ovary ellipsoid, densely pubescent, with straight tan or white trichomes ca. 0.1 mm long; styles free or united for about 0.5 mm, 6–7 mm, dark purple. Nearly mature fruits 5–6 × 2.5 cm, ellipsoid to slightly obovoid, with a broad blunt apiculate apex, lightly pubescent, green; seeds 7–8-sulcate, obovate to widely obovate, the ridges rugulose.

The description here presented deviates from the protologue in the following aspects. The plant is not a herbaceous vine, but a rather robust woody liana that occasionally completely covers midsized trees. Individual measurements have changed due to the variation found in the large amount of material seen. The shape of the leaves as well as the unlobed, bilobed, or trilobed apex shows more variation. But the most remarkable feature of this species is that in almost all open flowers the fleshy outer corona has been removed and cannot be observed. The senior author has observed that the buds all have a well-developed fleshy outer corona and a tiny non-plicate operculum adherent to the limen in buds presumed ready to flower the next day. Schwerdtfeger (1997) suggested that the corona falls off or is removed by visitors to the flower. It is significant that a nectary seems to be absent, a condition known also in the genus only in *P. xiikzodz* of Mesoamerica (MacDougal, 1992). We hypothesize that this species flowers very early in the morning and that the pollinator eats particularly the outer coronal rays while pollinating the flower. We know of no other example in the genus where floral parts other than nectar or pollen are offered as fodder for the pollinator. The mention of a 7-mm-high operculum by Escobar (1989) is an apparent typographical error: the only coronal structures on the type (operculum and remnants of corona) are 2 mm or less. The type collection seems to be an extremely large flower, in several aspects twice as large as some other collections that we refer to this species. Most fruits seen are immature, but *Gentry 74964* has a green fruit with black, mature seeds that probably is mature or nearly so. The people in the area of San Lucas, Loja, are said to eat mature fruits.

This unusual species belongs to the subgenus *Decaloba* (DC.) Reichenbach, and based on its bract morphology, position of laminar nectaries, and seed morphology, we agree with Schwerdtfeger (1997) that it belongs to section *Decaloba*. It is difficult to specify its nearest relative. It was discussed by Escobar (1989) in conjunction with *P. chelidonea* Masters, with which it has some resemblance in leaf shape. The reduced and non-plicate operculum, usually a diagnostic character at the subgenus level, is seen as an adaptation to the loss of the nectary and the peculiar adaptation to a chewing pollinator.

There is some variation in the length of the androgynophore in the material. Some specimens with long androgynophores will key in the *Flora of Ecuador* to *P. cuspidifolia* sensu Holm-Nielsen et al. (1988) (this species), but others will key to *P. lancearia* sensu Holm-Nielsen et al. (1988); see *P. smilacifolia* in this article for further discussion of differences.

Specimens examined. ECUADOR. **Azuay:** road Turi–Tarqui S of Cuenca, 2900–3000 m (fl), *G. Harling 27230* (GB not seen; photocopy, MO); eastern Cordillera, 1–8 km N of the village Sevilla de Oro, 8000–9000 ft., 27 July–12 Aug. 1945 (wilted fl), *Camp E-4343* (AAU); Km 12–15 Gualaceo–Macas road, remnants of montane forest with pastures, 3°00′S, 78°40′W, 2700–2900 m, 06 Aug. 1986

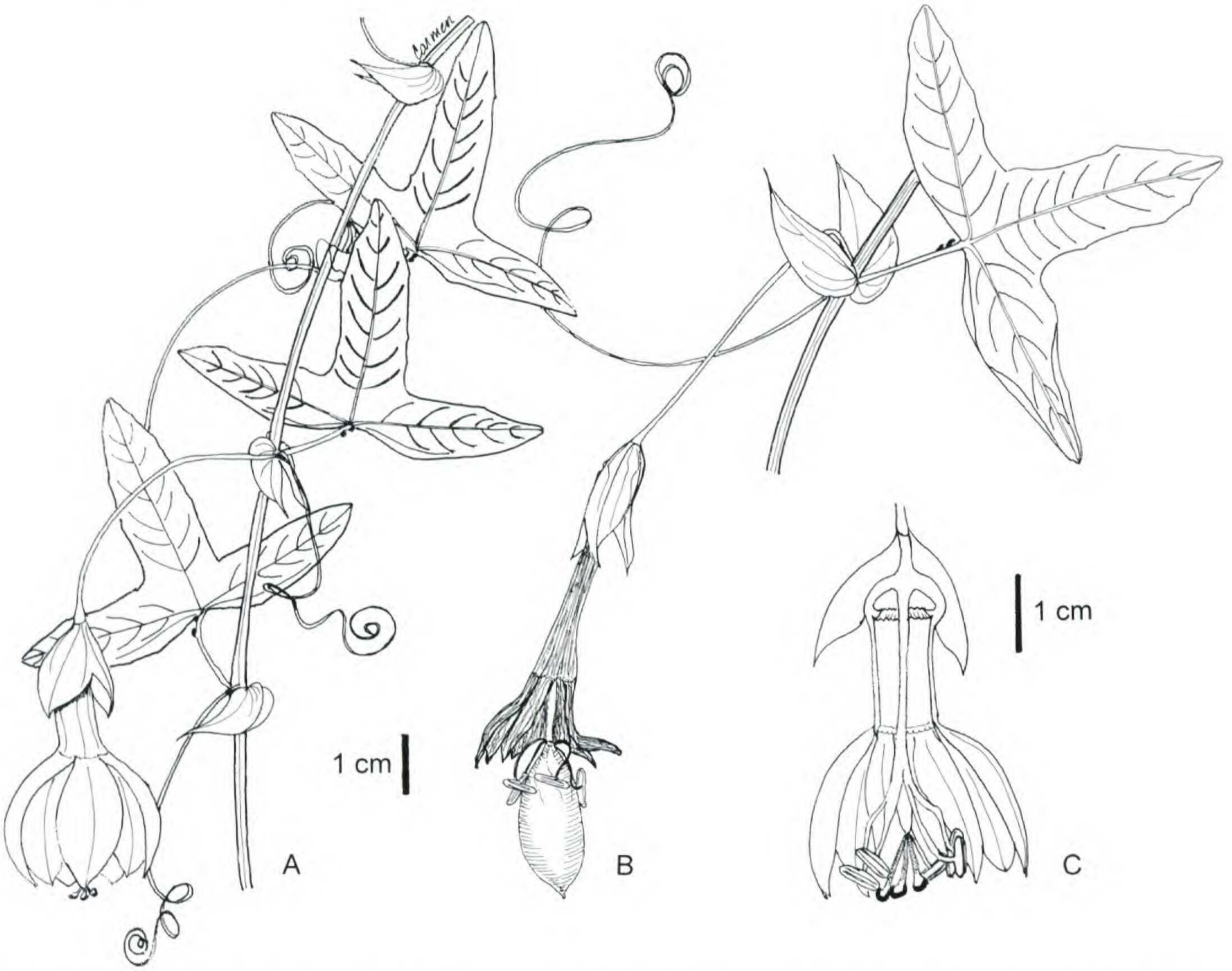

Figure 2. A–C *Passiflora luzmarina* P. Jørgensen. —A. Habit with flower. —B. Young fruit. —C. Flower. (A & C, *Cueva 516*; B, *Cueva 510*).

(fl, fr), *P. Jørgensen 61406* (AAU, MO, QCA, QCNE); Nudo de Portete, pass between headwaters of the ríos Tarqui (Atlantic) and Girón (Pacific), ca. 9000 ft., 10 Mar. 1945 (bud), *Camp E-2152* (NY); bosque del río Mazán al occidente de Cuenca, faldas del Cajas, 3050–3100 m, 17 Aug. 1987 (fr), *Mena 867* (NY, QCA). **Bolívar:** second stop along rd. above Chazo Juan, toward Echiandia, Ventanas–Salinas Rd., 1435 m, 3 Nov. 1992 (sterile), *D. Kappan 30* (TEX); small patches in disturbed cloud forest, rather dry, along first 15 km of road Chillanes–El Tambo, 2400 m, 18 July 1991 (fl), *van der Werff et al. 12464* (MO). **Chimborazo:** cañon of the Río Chanchan, about 5 km N of Huigra, 5000–6500 ft., 19–28 May 1945 (fl), *Camp E-3399p.p.* (NY); above Pallatanga, towards San Juan and Llimbe, 1°55′S, 79°03′W, 2300–2750 m, 25 Feb. 1987 (bud), *P. Jørgensen 61709* (QCA). **Cotopaxi:** Latacunga–Pilaló road, E of Pilaló, 0°58′S, 78°58′W, 2900 m, 10 Nov. 1984 (sterile), *P. Jørgensen & Brandbyge 56317* (AAU cultivated at AAU; QCA, QCNE from wild); Zumbagua–Pilaló, roadside, 0°57′S, 78°59′W, 2750–3050 m, 18 Feb. 1991 (bud), *P. Jørgensen et al. 93008* (AAU, MO, QCA). **Loja:** Loja–Zamora, km 11, 3°59′S, 79°11′W, 2630 m, 23 Feb. 1988 (sterile), *P. Jørgensen 65082* (AAU, QCA); San Lucas–Saraguro, km 2, roadside, 3°42′S, 79°15′W, 3300 m, 16 Nov. 1990 (fl, fr), *P. Jørgensen et al. 92728* (AAU, MO, QCA, QCNE); Guachanamá–Cerro Guachaurcu, km 0–6, secondary forest and shrubby páramo, 4°02′S, 79°52′W, 2800–3050 m, 25 July 1990 (fl), *P. Jørgensen et al. 92143* (AAU, MO, QCA, QCNE); Cerro de Celica, Celica–Guachanamá, past Guachanamá close to the antenna, 4°02′12″S, 79°52′14″W, 3090 m, 13 Apr. 1994 (fl), *P. Jørgensen et al. 133* (AAU, LOJA, MEXU, MO, NY, QCA, QCNE); Cerro Villonaco, Loja–La Toma, km 13, turnoff towards Chuquiribamba, km 2, at Hcda. Huangora, 3°56′52″S, 79°15′52″W, 2640 m, 18 Apr. 1994 (fl), *P. Jørgensen et al.* 376 (LOJA, MO, QCA, QCNE); Loja–Saraguro, km 25, forest remnants, 3°51′39″S, 79°16′52″W, 1730 m, 22 Apr. 1994 (fl), *P. Jørgensen et al. 519* (AAU, GB, LOJA, MEXU, MO, NY, QCA, QCNE). **Pichincha:** Cantón Quito, Carretera Chillogallo–Chiriboga, faldas del volcán Pichincha, 0°20′S, 78°45′W, 2500 m, 20 Feb. 1992 (sterile), *D. Rubio et al. 2426* (MO).

PERU. **Piura:** Cerro Aypate, 49 km E of Ayabaca, 4°35′S, 79°32′W, 2730 m, 22 Sep. 1991 (fr), *A. Gentry et al. 74964* (MO). **Amazonas:** Prov. Chachapoyas, 22 km from Leimebamba on road to Balsas, 6°45′S, 77°48′W, ca. 3000 m, (fl), *B. A. Stein & Todzia 2083* (holotype, MO); Chachapoyas–Celendín road, between Leymebamba and Calla-Calla, heavily damaged high montane forest, 6°45′S, 77°49′W, 3200 m, 27 May 1984 (fl), *D. N. Smith & J. Cabanillas 7204* (MO); Leimebamba, low forest, 2400 m, 29 Dec. 1962 (fl, imm. fr), *F. Woytkowski 7832* (MO(2)). **Cajamarca:** Prov. Cotumazá, Bosque de Cachil, 2500 m, 29 July 1993 (fl), *A. Sagástegui et al. 15006* (MO). **Piura:** Cerro Aypate, 49 km E of Ayabaca, lower slopes, 2120–2300 m, 4°35′S, 79°32′W, 24 Sep. 1991 (fl), *A. H. Gentry*

Table 2. Comparison of *Passiflora luzmarina* to subgenus *Tacsonia* species with short hypanthiums and *P. cumbalensis*.

Character/Species	*P. cumbalensis*	*P. linda*	*P. glaberrima*	*P. brachyantha*	*P. luzmarina*
Leaf	Simple trilobed	Compound trifoliate	Simple trilobed	Simple trilobed	Simple trilobed
Length of peduncle in cm	3.0–10.5	13–15	1.0–2.5	2.7–3.4	4.8–5.5
Length of hypanthium in cm	5.3–12.7	1.5–3.1	2.5–3.9	3.9–4.0	2.0–2.3
Leaf size in cm	2.6–14.5 × 3.5–16.3	2.5–10 × 7.8–13	2.4–5.2 × 4.4–4.2	3.5–7.3 × 4.4–11.0	3.4–5.9 × 5.7–8.6
Lower leaf surface	Glabrous to densely pubescent	Moderately strigose	Glabrous (occasionally sparsely pubescent)	Pubescent	Glabrous
Hypanthium length in cm	5.3–12.7	1.5–3.1	2.5–3.9	3.9–4.0	2.0–2.3
Hypanthium base	Slightly dilated	Dilated	Not dilated	Dilated	Dilated
Hypanthium outside	Glabrous	Glabrous	Pubescent	Pubescent	Glabrous

et al. 75046 (MO(2)). **Lambayeque:** Prov. Ferreñafe, Bosque de Chiñama, 2500–2600 m, 23 Aug. 1988 (imm. fr), *A. Cano 2085* (MO).

Passiflora luzmarina P. Jørgensen, sp. nov. TYPE: Ecuador. Loja: Cantón Loja, Uritusinga, camino a La Argentina, 200 m antes de La Argentina, Cerco de potrero, 4°05′15″S, 79°15′00″W, 2450 m, 10 Nov. 1995 (fl), *E. Cueva 516* (holotype, MO). Figure 2.

A *Passiflora brachyantha* L. K. Escobar caulibus foliis bracteis et hypanthio glabris, differt.

Vine, glabrous except puberulent inside margin of the bracts; stem terete to angular, striate. Stipules (0.7–)1.2–1.7(–2.7) × 0.3–0.6(–1.0) cm, reniform, apex acuminate to aristate, margin entire or with a few serrate glandular teeth, glaucous green or green; petiole 1.2–2.5 cm, dark, with (2–)4(–5) stipitate glands, one pair of glands located very close to the blade base, the second pair 3–5 mm from the blade base; leaf blade 2.8–7.4(–11.7) × 5.2–11.2(–20.0) cm, deltate, incised ⅔–⅕ of the length, three-lobed, lobes linear-lanceolate to lanceolate to ovate, 0.6–3.4 cm wide, lobe apices acute, apiculate, angle between lobes 80°–120°; base slightly cordate to deeply cordate; margin entire (with a few glandular-serrate teeth along the basal margin of the side lobes) to serrate; upper leaf surface green with light green impressed principal nerves; lower surface glaucous green, principal nerves prominent, dark. Peduncle 2.5–5.5 cm, solitary, very slender, pendent; bracts connate for ½ forming a campanulate structure 1.6–2.8 × 1.3–1.4 cm, each bract elliptic, margin entire, apex acute, puberulent along inside margin, indument in a 1.5–2.0-mm zone along margin. Flowers 3.5–4.0 cm diam., glabrous; hypanthium 2.0–4.3 × 0.5–0.7 cm, the base truncate and dilated, otherwise cylindric, light pink to light purple outside, white inside; sepals 2.2–2.7 × 1.0–1.2 cm, oblong, acute, carinate, aristate, awn 0.5–1 mm, light pink to light purple; petals 1.8–2.6 × 0.4–0.9 cm, linear, obtuse to truncate, narrowed at base, light pink to light purple; corona uniseriate, reduced to a purple ring at mouth of hypanthium with white teeth; operculum straight, pointing downward at a 25° angle, margin dentate, white; androgynophore 2.7–5.0 cm; ovary 5–6 mm, ellipsoid, glabrous; styles 4–8 mm, light green; stigma 2 mm diam., capitulate, whitish green. Mature fruit orange red, 4.0–7.2 × 2.5 cm; seeds obovoid, 5–6 × 3–5 mm, dark brown, pitted to the margin.

This gracile new species is known from nine collections from about 2500 m elevation on the Pacif-

ic-facing slopes of Cerro Villonaco and Uritusinga. These localities lie just above the acacia-forests, which have their uppermost distribution at about 2400 m elevation in the Catamayo valley. The forest remnants that house this species are few and under considerable pressure. However, most *Passiflora* species can survive in hedges as indicated by the type collection. The locality of *Jørgensen et al. 51* was burned in 1995, and it is uncertain whether this species will survive burning.

Passiflora luzmarina is named after the senior author's niece Luz Marina Unda, who is both tiny and very beautiful. This species has the second-smallest flowers within the subgenus *Tacsonia*, only matched by *P. gracilens*. It is probably most closely related to *P. cumbalensis* with which it shares its pendent light pink to light purple flowers on a delicate long peduncle. The length of the peduncle varies: when flowering at the tip of a pendent shoot peduncles are short, while when flowering below, on horizontal shoots, peduncles are longer. It also resembles *P. glaberrima* from further south, but is distinguished by the longer and more slender peduncles, and by being completely glabrous. Escobar (1992) described *P. brachyantha* from a collection that was collected only a few kilometers from the localities where *P. luzmarina* has been found. These two species can be distinguished by the almost complete lack of indument in *P. luzmarina* versus pubescent stems, bracts, lower leaf surface, and stipules in *P. brachyantha*. For further characters to separate the species see Table 2. Escobar (1992) attributed the speciation of short-tubed tacsonias "to the selective pressure exerted by their pollinators." It is remarkable that the number of short-tubed species of subgenus *Tacsonia* known in southern Ecuador and northern Peru has more than doubled in the past 10 years.

Paratypes. ECUADOR. **Loja:** Cantón Loja, Uritusinga, La Argentina, camino a Bellavista, matorral en cerco, 4°05′50″S, 79°15′20″W, 2500 m, 7 Oct. 1995 (fr), *E. Cueva 510* (MO); Uritusinga, camino a La Argentina, 200 m antes de La Argentina, 4°05′15″S, 79°15′00″W, 2450 m, 7 Mar. 1997 (fl & fr), *E. Cueva 929* (MO); (fl), *E. Cueva 929B* (MO); 19 Apr 1997 (fl), *V. van den Eynden & E. Cueva 991* (MO); (fr), *V. van den Eynden & E. Cueva 992* (MO); (fl), *V. van den Eynden & E. Cueva 993* (MO); (immature fr), *V. van den Eynden & E. Cueva 994* (MO); Cerro Villonaco, old road Loja–Pedestal–La Toma, km 11.9, turnoff to the left [South], km 0.5, 2550 m, 4°00′53″S, 79°15′10″W, 10 Apr. 1994 (fl), *P. Jørgensen et al. 51* (MO, QCNE).

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